



IDEM's Surface Water Quality Assessment Program

E. coli Sampling Program

Program Objective

The objective of this program is to determine the ambient concentrations of bacteriological contamination in Indiana's surface waters by measuring the fecal coliform bacteria *Escherichia coli* (*E. coli*). *E. coli* monitoring can be an important tool for determining the safety of swimming and wading in rivers and streams. Monitoring bacterial contamination is accomplished by using randomly selected sampling sites throughout Indiana's major river basins to assess and characterize the water quality with respect to an indicator, *E. coli*. Site selection is conducted by the National Health and Environmental Effects Research Laboratory (NHEERL) in Corvallis, Oregon and focuses on all streams within IDEM's rotating river basin design.

The project uses a mobile laboratory to facilitate *E. coli* testing to eliminate the necessity of transporting samples to distant contract laboratories within a six-hour holding time. A converted van provides IDEM staff with work space containing storage for samples, supplies for Colilert® testing, and equipment for collecting, preparing, incubating, analyzing and disposing of up to 40 samples per day. The mobile laboratory allows staff to complete the analyses in the field, thereby increasing the number of tests performed and the efficiency of this program.

Program Description

Media:	Surface Water: Rivers and Streams
Study Area:	Statewide
Site Selection Type:	Sites are targeted or selected at random depending on the program
Sampling Sites:	For Probabilistic Sampling: Rivers and streams within the targeted rotating river basins
Sampling Frequency:	Each location (site) is sampled five times equally spaced over a 30-day period.
Data Collected:	Colony forming units of <i>E. coli</i> bacteria per 100 ml of surface water, Method 9213D-SM and Method 9223-SM, Enzyme Substrate Coliform Test to determine a Most Probable Number (MPN) from charts provided by the manufacturer.

Program Participants

This program is operated through Surveys Section, Assessment Branch, Office of Water Quality, IDEM, with additional efforts by:

1. Indiana State Department of Health Laboratory
2. Private laboratories under contract with the State of Indiana
3. Biological Studies Section, Assessment Branch, Office of Water Quality, IDEM
4. NHEERL

Program Products

Data for the 305(b) assessment process, the 303(d) impaired water body listing, to support the Environmental Performance Partnership Agreement (EnPPA), and to satisfy monitoring for the designated water body use of full body contact recreation.

Technical Notes

1. Test Method 9223-SM Enzyme Substrate Coliform Test at Data Quality Level 3.
2. Idexx Quanti-tray 2000™ MPN Method, Colilert Test® at Data Quality Level 3.
3. Temperature, pH, dissolved oxygen, dissolved oxygen percent saturation, specific conductance and turbidity analyzed in the field.

Contact Information

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<p>IDEM Information: (317) 232-8603 or 800-451-6027 800-743-3333(TDD) toll-free for Indiana residents www.IN.gov/idem/water/</p> <p>Report Environmental Emergencies: (888) 233-7745</p> <p>Confidential Technical Assistance: (800) 988-7901</p> <p>Pollution Complaint: www.IN.gov/idem/pollutioncomplaints/</p> <p>Questions and Comments: www.IN.gov/idem/contact/questions.html</p>	<p><u>For More Information on IDEM's Office of Water Quality...</u></p> <p>Assessment Branch (Surface water quality monitoring: rivers and streams, lakes, water quality standards) Shadeland Office, Indianapolis (317) 308-3173</p> <p>Compliance Branch (Compliance and inspections, data and information services, wastewater certification and continuing education) Indiana Government Center North, Indianapolis (317) 233-2545</p> <p>Drinking Water Branch (Public water supply supervision and ground water protection) Shadeland Office, Indianapolis (317) 308-3308</p> <p>Permitting Branch (Facilities Construction & Engineering Support, Industrial & municipal permits, modeling, and wet weather) Indiana Government Center North, Indianapolis (317) 232-8760</p> <p>Watershed Planning Branch (Rules development, wetlands, TMDL, watershed management) Indiana Government Center North, Indianapolis (317) 233-8488</p>
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